REMARKS

Claims 19-40 were pending and stand rejected. Claims 19-22, 24-25, 30-32, and 35-36 have been amended.

Claim 19 was rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for omitting essential steps. Specifically, the Examiner stated that the omitted steps were determining a first facial component that maximizes a posterior probability that the person class of the first facial component is the first person (Detailed Action, page 2). Applicant respectfully traverses. Claim 19 has been amended to recite "determining … a first facial component that maximizes a posterior probability that the person class of the first facial component is the first person" and complies with 35 U.S.C. § 112, second paragraph. Claim 30 has been amended in a similar way.

Claims 19-20, 22-31, and 33-40 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Heisele. Applicant respectfully traverses in view of the amended claims.

As amended, claim 19 recites:

A method for recognizing faces of persons, comprising:
- training a system to recognize a facial component;
- populating a first knowledge base with facial components and, for each facial component, the facial component's body part classification;
- using the first knowledge base to determine, for each facial component in a plurality of facial components, a body part classification for the facial component, wherein the plurality of facial components comprises facial components extracted from facial identification training image data of a face of a first person at a first viewpoint and a face of a second person at a second viewpoint;
- determining, from said plurality of facial components and their determined body part classifications, a first facial component that maximizes a posterior probability that the person class of the first facial component is the first person; and
- determining, from said plurality of facial components and their determined body part classifications, a second facial component that maximizes a posterior probability that the person class of the second facial component is the second person.

Claim 19 recites, in part, "determining, from said plurality of facial components and their determined body part classifications, a first facial component that maximizes a posterior probability that the person class of the first facial component is the first person" (emphasis added).

As described in the pending application, a facial component that maximizes a posterior probability that the person class of the facial component is a particular person is referred to as an "indicator component" (see abstract, summary (3:2-6; 4:7-13; 5:13-19), detailed description (13:4-20), and figures (FIG. 19)). In one embodiment, only indicator components are stored for use in later identification (6:4-5). In this embodiment, the volume of data required to perform face recognition can be minimized (6:5).

Heisele discusses two global approaches and one component-based approach to face recognition (page 2, left column, lines 4-5). The component system detects and extracts local components of a face (p. 2, left column, lines 14-15). The extracted facial components are normalized in size and fed into a set of classifiers (p. 2, left column, lines 19-20). The facial components are also located, and their geometrical configuration is checked against a learned face model (p. 2, left column, lines 16-19). In other words, the component-based approach uses two levels (Section 4.1, paragraph 1). On the first level, component classifiers independently detect facial components (Section 4.1, paragraph 1). On the second level, a geometrical configuration classifier combines the results of the component classifiers (Section 4.1, paragraph 1).

In Heisele, 10 components are used together for face recognition (Section 4.2, paragraph 1; FIG. 5). Specifically, each of the 10 components is normalized in size (Section 4.2, paragraph 1). The gray values of each component are then combined into a single feature vector, which is

used as the input to a face recognition classifier (Section 4.2, paragraph 1). Heisele does not disclose, teach, or suggest determining a component (e.g., from the set of 10 components) that maximizes a posterior probability that the person class of the component is a particular person (e.g., the person whose facial image includes the 10 components). It follows that Heisele does not disclose, teach, or suggest the claimed element "determining, from said plurality of facial components and their determined body part classifications, a first facial component that maximizes a posterior probability that the person class of the first facial component is the first person" (emphasis added).

Therefore, claim 19 is patentable over Heisele. Independent claim 30 (as amended) recites similar language and is also patentable over Heisele for at least the same reasons.

Claims 21 and 32 were rejected under 35 USC 103(a) as allegedly being unpatentable over Heisele in view of Viola. Applicant respectfully traverses. Additionally, for the record, Applicant traverses the Examiner's assertions regarding the disclosure of Viola and regarding the motivation to combine Heisele and Viola.

Viola does not remedy the deficiency of Heisele. Specifically, Viola uses 20 features to perform face recognition (page 17, last paragraph). Thus, Viola does not disclose, teach, or suggest the claimed element "determining, from said plurality of facial components and their determined body part classifications, a first facial component that maximizes a posterior probability that the person class of the first facial component is the first person."

The claims not specifically mentioned above depend from claims 19 or 30 (directly or indirectly), which were shown to be patentable over Heisele. In addition, these claims recite other features not included in claims 19 or 30. Thus, these claims are patentable over Heisele, for at least the reasons discussed above, as well as for the elements that they individually recite.

Applicant respectfully submits that the pending claims are now allowable over the cited art of record and requests that the Examiner allow this case. The Examiner is invited to contact the undersigned in order to advance the prosecution of this case.

Respectfully submitted,
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